

water temperature and engine lubricating oil pressure must be provided and located in plain view.

(c) All electrical components of the engine must be protected in accordance with § 183.410 of Title 33, Code of Federal Regulations to prevent ignition of flammable vapors.

§ 169.607 Keel cooler installations.

(a) Except as provided in this section, keel cooler installations must meet the requirements of § 56.50–96 of this chapter.

(b) Approved metallic flexible connections may be located below the deepest load waterline if the system is a closed loop below the waterline and its vent is located above the waterline.

(c) Fillet welds may be used in the attachment of channels and half round pipe sections to the bottom of the vessel.

(d) Short lengths of approved non-metallic flexible hose may be used at machinery connections fixed by hose clamps provided that—

(1) The clamps are of a corrosion resistant material;

(2) The clamps do not depend on spring tension for their holding power; and

(3) Two clamps are used on each end of the hose or one hose clamp is used and the pipe ends are expanded or beaded to provide a positive stop against hose slippage.

§ 169.608 Grid cooler installations

(a) Hull penetrations for grid cooler installations must be made through a cofferdam or at a sea chest.

(b) Grid coolers must be suitably protected against damage from debris and grounding by recessing the unit into the hull or by the placement of protective guards.

(c) Each grid cooler hull penetration must be equipped with a shutoff valve.

§ 169.609 Exhaust systems.

Engine exhaust installations and associated cooling systems must be built in accordance with the requirements of American Boat and Yacht Council, Inc. Standard P-1, "Safe Installation of Exhaust Systems for Propulsion and Auxiliary Machinery" and the following additional requirements:

(a) All exhaust installations with pressures in excess of 15 pounds per square inch gage or employing runs passing through living or working spaces must meet the material specifications of part 56 of Title 46, Code of Federal Regulations.

(b) Horizontal dry exhaust pipes are permitted if they do not pass through living or berthing spaces, terminate above the deepest load waterline, are arranged to prevent entry of cold water from rough seas, and are constructed of corrosion resistant material at the hull penetration.

(c) When the exhaust cooling system is separate from the engine cooling system, a suitable warning device must be provided to indicate a failure of water flow in the exhaust cooling system.

§ 169.611 Carburetors.

(a) This section applies to all vessels having gasoline engines.

(b) Each carburetor other than a down-draft type, must be equipped with integral or externally fitted drip collectors of adequate capacity and arranged so as to permit ready removal of fuel leakage. Externally fitted drip collectors must be covered with flame screens.

(c) All gasoline engines must be equipped with an acceptable means of backfire flame control. Installations of backfire flame arresters bearing basic Approval Nos. 162.015 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 165.042 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet the applicable requirements of part 58, subpart 58.10 (Internal Combustion Engine Installations) of this chapter.

[CGD 83-005, 51 FR 896, Jan. 9, 1986, as amended by CGD 88-032, 56 FR 35827, July 29, 1991]

FUEL SYSTEMS

§ 169.613 Gasoline fuel systems.

(a) Except as provided in paragraph (b) each gasoline fuel system must meet the requirements of § 56.50–70 of this chapter

(b) Each vessel of 65 feet and under must meet the requirements of